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ART UNIT	PAPER NUMBER
2133	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/930,004	TERNULLO ET AL.	
	Examiner	Art Unit	
	Marshall S Eng	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-28,30 and 31 is/are rejected.

7)☒ Claim(s) 1, 3,13,17,22,29,31 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 15 August 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Priority

1.1 Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Drawings

2.1 The drawings are objected to because the description of figure 1a on lines 4 of paragraph 42 on page 11 describe the service controller as 106b and bicontroller as 106a. Figure 1a mislabels the two controllers as 106a and 106b, respectively. Based on other references in the specifications to the controllers, it appears that the reference numbers in the specifications on the above cited lines should be changed.

2.2 The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference 420 of figure 4b.

2.3 The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference 710 of figure 7. It seems that the xml parser, should remain labeled 134, in figure 7 and that reference 710 on line 5 of paragraph 115 of page 38, should be changed to 134.

2.4 The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference 1014 of figure 10b.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the

Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3.1 The abstract of the disclosure is objected to because on lines 5-6 the reference to the checksum value (407) is said to be placed in an integrity element (402), the figure associated with the abstract (figure 4a) does not clearly show that said checksum value of window A is within integrity element 402. The Examiner acknowledges that integrity elements a (402), b (404), and c (406) are all identical in makeup and therefore suggests that the reference numbers in the abstract, or the abstract itself, be changed to reflect the diagram depicted in figure 4a. A suggestion is to simply change references of "window (401a)" to "window (401b)" and to change all references of "integrity element (402)" to "integrity element (404)."

Correction is required. See MPEP § 608.01(b).

3.2 The disclosure is objected to because of the following informalities: the status and serial numbers of nonprovisional related application(s) (whether patented or abandoned) listed on page 1 of the specifications should be included. If a related application has become a patent, the expression "now Patent No. _____" should follow the filing date of the related application. If a related application has become abandoned, the expression "now abandoned" should follow the filing date of the related application.

3.3 The use of the trademarks "Bluetooth", "Palm Pilot", and "iPAQ Blackberry" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

3.4 The disclosure is objected to because of the following informalities: the phrase "executable code" has been unnecessarily repeated twice on line 2 of paragraph 16 on page 7.

3.5 Claim 1 is objected to because of the following informalities:

- line 15 recites: " whereby ...." Such recitation is non- functional language, and as a result, is not given patentable weight. *It has been held that functional "whereby" statement does not define any structure and accordingly cannot serve to distinguish in re Mason, 114 USPQ, 44 CCPA 937 (1957).* The "whereby" should be changed to "wherein."

3.6 Claims 3, 13, 17, 22, 29, and 31 are objected to because of the following informalities: the claims refer to the term "XML" which has not been defined in the specifications.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

4.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.2 Claim(s) 1-3 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 1,

TCP substantially teaches of creating and transmitting data signals (i.e. segments/packets/frames) through a communication medium to receivers, see paragraph 1 of page 4. TCP further teaches of parsing (or packeting or packaging) bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page

4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc...) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does not explicitly teach of apparatuses or devices to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type hardware once the method is know/determined.

As per claim 2,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have

been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when disclosing known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

As per claim 3,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and

transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

4.3 Claim(s) 4 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 4,

TCP as noted above in claim 1 and later in claim 3 substantially teaches of the limitations of claim 4. TCP does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

4.4 Claim(s) 5-9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 5,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17, and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets/frames as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum (which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4.

While TCP does not explicitly teach of apparatuses or devices to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type hardware once the method is know/determined.

As per claim 6,

TCP substantially teaches, as noted above in claim 5, the limitations of claim 6.

With respect to the limitations of claim 6, TCP further teaches of a checksum that is calculated over its associated frame/packet, see pages 15-17 and specifically the Checksum paragraph of page 16.

As per claims 7 and 8,

TCP substantially teaches, as noted above in claim 5, the limitations of claim 7.

With respect to the limitations of claim 7, TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

As per claim 9,

TCP substantially teaches, as noted above in claim 5, the limitations of claim 9.

With respect to the limitations of claim 9, TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic.

Further, the specifications do not teach of any checksum calculation techniques other than XOR when disclosing known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

4.5 Claim(s) 10 and 11 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 10

TCP, as noted above in claim 5, substantially teaches of the limitations of claim 10. TCP does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see lines 3-6 of paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP using the optical communication protocol. This modification would have been obvious because

one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

As per claim 11,

TCP, as noted above in claim 5 and later in claim 10, substantially teaches of the limitations of claim 11. TCP does not teach of data signal being created by modulating an electric light.

Specs, in an analogous art, teaches of modulating an electric light to generate optical signals as being known in the art, see lines 1-5 of paragraph 161 of page 55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create frames/packets/broadcast signal of TCP by modulating an electric light. This modification would have been obvious to one of ordinary skill in the art would because one skilled in the art would have known of the techniques as mentioned by Specs. Further, since Specs discloses that the techniques are known in the art, one skilled in the art would readily be able to modulate light so as to generate the optical signals with which the data signals are transferred over.

4.6 Claim(s) 12,13, 15 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 12,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of parsing (or packeting or packaging) bytes into frames

(or packets) containing a subset of the bytes, see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc...) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does not explicitly teach of making the transmission available for handheld devices, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the broadcast signal available for a handheld device. Handheld devices (i.e. PDAs) are essentially handheld computers that can process information whether received via their infrared port or through their physical

port. One skilled in the art would obviously want a handheld device to be able to receive information so as to be able to communicate with it.

Further, while TCP does not explicitly teach of apparatuses, devices, or computer readable executable code embedded to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type of hardware or computer executable code once the method is known/determined.

As per claim 13,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

As per claim 15,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these

values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

4.7 Claim(s) 14 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 14,

TCP as noted above in claim 12 substantially teaches of the limitations of claim 14. TCP does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by

Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

4.8 Claim(s) 16-19 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 16,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17 and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum (which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4. TCP further teaches of a checksum that is calculated over its associated frame/packet, see pages 15-17 and specifically the Checksum paragraph of page 16. TCP further teaches of checking a checksum at the

receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated. Further, TCP teaches of passing the frames/segments/packets on if the checksums match, see paragraph 3 of page 4, specifically where TCP mentions discarding damaged segments (i.e. segments in which the checksums do not match) and keeping/passing on those that do match.

While TCP does not explicitly teach of apparatuses, devices, or computer readable executable code embedded to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type of hardware or computer executable code once the method is known/determined.

As per claim 17,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

As per claim 18,

TCP further teaches of discarding the frames/segments/packets on if the checksums match, see paragraph 3 of page 4, specifically where TCP mentions discarding damaged segments (i.e. segments in which the checksums do not match).

As per claim 19,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as

opposed to receiving the packet and read out the operation and then calculate the checksum).

4.9 Claim(s) 20-22 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 20,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of parsing (or packeting or packaging) bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc...) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals

over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does not explicitly teach of making the broadcast signal available for transmission to a receiving device, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the broadcast signal available for the transmission. TCP, in paragraph 6 of page 40, does teach of a connection that is established and data is communicated between senders and receivers. Therefore making the signal available for transmission to a receiving device must occur since TCP teaches that a connection is established and data/segments are communicated/exchanged.

As per claim 21,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the

need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

As per claim 22,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

4.10 Claim(s) 23 and 24 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 23

TCP, as taught above in claim 20, substantially teaches of the limitations of claim 23. TCP, however, does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see line see lines 3-6 of paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

As per claim 24,

TCP, as taught above in claim 20, substantially teaches of the limitations of claim 24. TCP does not teach of data signal being created by modulating an electric light.

Specs, in an analogous art, teaches of modulating an electric light to generate optical signals as being known in the art, see line see lines 1-5 of paragraph 161 of page 55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create frames/packets/broadcast signal of TCP by modulating an electric light. This modification would have been obvious to one of ordinary skill in the

art would because one skilled in the art would have known of the techniques as mentioned by Specs. Further, since Specs discloses that the techniques are known in the art, one skilled in the art would readily be able to modulate light so as to generate the optical signals with which the data signals are transferred over.

4.11 Claim(s) 25-27 and 31 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 25,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17 and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum

(which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4.

While TCP does not explicitly teach of apparatuses or devices to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type hardware once the method is known/determined.

As per claims 26 and 27,

TCP substantially teaches, as noted above in claim 25, the limitations of claims 26 and 27. With respect to the limitations of claims 26 and 27, TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

As per claim 31,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

4.12 Claim(s) 28, 30 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP).

As per claim 28,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of parsing (or packeting or packaging) bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc...) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the

segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

While TCP does not explicitly teach of the data signal being used to modify the operation of the receiving device, TCP does teach of the use of acknowledgements (ACKs) to inform the sender that a packet has been received, see paragraph 1 of page 10, and of the use of PUSH commands, see paragraphs 5-7 of page 12, to change (modify) the operation of the receiver to "push" the data immediately. Therefore, through the use of ACKs to inform the receiver to send newer, or older segments, and the use of PUSH commands to pass the data on immediately, TCP teaches of modifying the operation of the receiver (and sender too).

As per claim 30,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the

need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

Allowable Subject Matter

5.1 Claim 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. RFC 1071

b. Aaker et al. U.S. Patent No. 5,815,516

c. Bardet et al. U.S. Patent No. 5,260,936

d. Dravida et al. European Patent Application No. 93300026.7

e. Gentry U.S. Patent No. 5,663,952

f. Melzer et al. U.S. Patent No. 5,898,713

g. Knapp U.S. Patent No. 4,975,926

h. Shloss et al. U.S. Patent No. 5,307,349

i. Aaker et al. U.S. Patent No. 5,758,087

6.2 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marshall S Eng whose telephone number is (703) 305-4638. The examiner can normally be reached on M-F, 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mse

Gary J. Lamarre
for
Albert DeCady
Primary Examiner